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Attorney Docket No. ATI-371

**UNITED STATES PATENT AND TRADEMARK OFFICE**

Examiner: Toan C. To

Art Unit: 3616

Re: Application of: David S. Breed et al.  
Serial No.: 10/733,957  
Confirmation No.: 8145  
Filed: December 11, 2003  
For: Weight Measuring Systems and Methods for Vehicles  
Customer Number: 22846

**APPEAL BRIEF UNDER 37 C.F.R. §41.37**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

August 15, 2005

Dear Sir:

On June 9, 2005, appellants, through their attorney, appealed from the final rejections of claims 60, 62 and 64-68 set forth in an Office Action dated March 9, 2005 for the above-referenced application. The Notice of Appeal was received on June 13, 2005, and therefore this Appeal Brief is being timely filed as August 15, 2005 is the next business day after two-months from the date the Notice of Appeal was received.

This Appeal Brief is submitted by appellants in support of the patentability of claims 60, 62 and 64-68 of this application. For the reasons set forth below, it is believed that the rejections in the Office Action dated March 9, 2005 should be reversed.

**FIRST CLASS MAIL CERTIFICATION**

I hereby certify that this Appeal Brief is being deposited with the United States Postal Service as first class mail in a postage-paid envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on August 15, 2005.

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Brian Roffe

**A. REAL PARTY IN INTEREST**

The real party in interest of the above-identified application is Automotive Technologies International, Inc., by virtue of an assignment of 100% interest in the application by the inventor-appellants.

**B. RELATED APPEALS AND INTERFERENCES.**

At this time, there are no related appeals or interferences.

**C. STATUS OF CLAIMS**

Claims 60, 62 and 64-68 are pending in this application and all have been rejected. Claims 1-59, 61 and 63 have been cancelled. Appellants are therefore appealing the final rejections of claims 60, 62 and 64-68.

Claim 60 is an independent claim, claim 62 is a second independent claim upon which claims 64, 67 and 68 depend directly or indirectly and claim 65 is a third independent claim upon which claim 66 depends. The text of the claims on appeal is found in the Claims Appendix.

**D. STATUS OF AMENDMENTS FILED SUBSEQUENT TO FINAL REJECTIONS**

A first Amendment Under 37 C.F.R. §1.116 was filed on May 12, 2005. In an Advisory Action mailed June 1, 2005, the Examiner indicated that the Amendment would be entered for the purposes of Appeal. A second Amendment Under 37 C.F.R. §1.116 was filed on June 9, 2005. In an Advisory Action mailed July 5, 2005, the Examiner indicated that this Amendment would not be entered for the purposes of Appeal. A third Amendment Under 37 C.F.R. §1.116 was filed on July 26, 2005. In an Advisory Action mailed August 11, 2005, the Examiner indicated that the Amendment would be entered for the purposes of Appeal.

## **E. SUMMARY OF THE INVENTION**

This application is directed generally to apparatus and methods for controlling vehicular systems based on morphology of an occupant. A generic apparatus typically includes one or more sensors which detect, measure and/or determine a morphological characteristic of an occupant of a passenger compartment of a motor vehicle, a control unit which receives data about the occupant's morphology from the sensor(s) and one or more vehicular systems which are controlled by the control unit based on the morphology of the occupant. An example of a vehicular system which is controlled by the control unit is an occupant restraint device such as an airbag.

### **Independent Claim 60**

The present invention as defined in claim 60 relates to one specific embodiment of such an apparatus wherein a control module is provided to receive input from a specific type of weight sensor and controls deployment of an airbag. Specifically, claim 60 is directed to an apparatus for sensing pressure applied to a seat by an occupant of the seat and for controlling deployment of an airbag which includes a bladder (251) defining a chamber and adapted to be arranged in a seat portion of the seat, i.e., the seat bottom (250) (see Fig. 49 and the description thereof in the specification at page 159, lines 1-12).

(Although reference is being made to certain drawings herein for the purpose of explaining the claimed invention, as well understood by practitioners, the scope of the claims is not being limited to any of the illustrated embodiments). The apparatus also includes a control module (254) arranged to control deployment of an airbag (352) (see Fig. 59A and the description thereof in the specification at page 211, lines 2-11). Additionally, the apparatus includes a pressure sensor (256) for measuring a pressure in the bladder and which generates a signal based thereon and provides it to the control module (254) (see page 159, lines 13-15).

### **Independent Claim 62**

The present invention as defined in claim 62 relates to one specific method for controlling an occupant restraint device arranged to protect an occupant in a vehicle in a crash involving the vehicle in

which a bladder (251) defining a chamber is arranged in a seat portion (250) of a seat in the vehicle, a pressure in the bladder is measured, a signal based on the measured pressure is provided to a control module (254) and deployment of the occupant restraint device is controlled by means of the control module (254).

#### Independent Claim 65

The present invention as defined in claim 65 relates to a vehicle including a system for protecting an occupant in the vehicle in a crash involving the vehicle which comprises an occupant restraint device (e.g., airbag 352) arranged in the vehicle to protect the occupant of the vehicle, a seat having a seat portion (250), a bladder (251) having a chamber and arranged in the seat portion (250), a control module (254) arranged to control deployment of the occupant restraint device (352), and a pressure sensor (255) for measuring a pressure in the bladder and generating a signal based thereon and providing the signal to the control module (254).

#### Dependent Claims 67 and 68

Claims 67 and 68, which depend from claim 62, relate to a method wherein at least one other vehicular system, subsystem or component (other than the occupant restraint device) is controlled by means of the control module (254). For example, another system, subsystem or component can be a pressure control device (255) which controls pressure in the bladder.

### **F. GROUNDS OF REJECTIONS**

Claims 60, 62 and 64-68 were rejected under 35 U.S.C. §102(b) as being anticipated by Fortune et al. (U.S. Pat. No. 6,101,436). The issue presented on this appeal is whether the claimed invention is entitled to the benefit of the filing date of a grandparent application, namely, U.S. patent application Ser. No. 08/474,783, which predates the effective filing date of Fortune et al. and thus would remove the availability of Fortune et al. as prior art.

## **G.      GROUPING OF CLAIMS**

Claims 60, 62 and 64-68 do not stand or fall together. Rather, claims 60, 62, 64-66 stand or fall together (a first group) and claims 67 and 68 stand or fall together (a second group).

## **H.      ARGUMENT**

### **1.      First and Second Groups**

Appellants assert an entitlement, pursuant to 35 U.S.C. §120, to the benefit of the filing date of U.S. patent application Ser. No. 08/474,783 (issued as U.S. Pat. No. 5,822,707, the '707 patent) which predates the effective filing date of Fortune et al. If the conditions of 35 U.S.C. §120 are satisfied, then Fortune et al. is not available as prior art and the rejection of claims 60, 62 and 64-68 should be removed.

As for satisfying the conditions of 35 U.S.C. §120, priority of the '783 application has been properly claimed through three intervening applications, namely U.S. patent application Ser. No. 09/128,490 (which is a continuation-in-part of the '783 application), U.S. patent application Ser. No. 09/193,209 (which is a continuation-in-part of the '490 application), and U.S. patent application Ser. No. 09/849,559 (which is a continuation-in-part of the '209 application), there is continuity of disclosure of the claimed subject matter through these intervening applications, and there is at least one common inventor named in the instant application and the '783 application, i.e., David S. Breed.

The sole issue is whether the claimed invention is fully supported by the '707 patent in the manner provided by 35 U.S.C. §112, first paragraph.

In the Office Action, the Examiner takes a position that the pending claims are not fully supported by the '707 patent and states "...the '707 patent does not reasonably provide enablement for 'measured pressure in said chamber and providing said signal to said control module, wherein said control module is arranged to control deployment of the airbag' as claim[ed] in claim 60". One reason asserted by the Examiner is that the control module 150 controls deployment of the airbag based on the signal received from the weight sensor 200 but not based on the measured pressure signal received from

the pressure sensor in the container (bladder) as set forth in independent claim 60 (reference numerals being those of the '707 patent). Similar reasons are alleged for the lack of support in the '707 patent for the subject matter of independent claims 62 and 65.

The Examiner's rejection is respectfully traversed on the grounds that claims 60, 62 and 65 do NOT recite that airbag deployment is controlled based on the measured pressure signal received from the pressure sensor in the bladder as alleged by the Examiner. Rather, claims 60, 62 and 65 recite the presence of a control module which both receives a signal based on the measured pressure in the chamber of the bladder and also controls airbag deployment, i.e., a common control module performs both functions. The claims are thus directed to the use of a single control module (or control circuit) to obtain input from a pressure sensor associated with a bladder and also to control airbag deployment. Claims 60, 62 and 65 therefore allow for airbag deployment based on signals other than that received from the pressure sensor and on information other than the measured pressure in the chamber of the bladder. Indeed, the '707 patent fully supports control of airbag deployment based on signals from various sensors such as height sensors (see col. 11, lines 35-41).

Claims 60, 62 and 65 also do not recite nor limit use of the signal from the pressure sensor by the control module for controlling airbag deployment. Rather, the claimed embodiments allow for use of this signal by the control module to control, e.g., the stiffness of the seat (see col. 9, lines 63-66). This feature is covered by the dependent claims 67 and 68.

The '707 patent fully supports the feature of a common control module 150 which controls multiple, different apparatus (e.g., an airbag, a headrest and a seat) based on different inputs (height sensors for the airbag and headrest and weight sensors for the seat). Indeed, it is respectfully submitted that the specification of the '707 patent contains a written description of the presently claimed embodiments of the invention which enables any person skilled in the art to which it pertains to make and use the claimed embodiments in compliance with 35 U.S.C. §112, first paragraph. A person skilled in the art would readily appreciate in view of the repeated mention of a control circuit or control module (all

designated by reference numeral 150) for receiving inputs from various sensors and providing specific outputs for controlling adjustment of various components (see col. 6, lines 14-28, col. 6, lines 36-50, col. 9, lines 54-66, col. 10, lines 52-55, col. 11, lines 35-41), that a single control circuit or control module may be provided and receives input from the pressure sensor in the seat (the embodiment shown in Fig. 5) and also controls output to an airbag deployment control unit (the embodiment shown in Fig. 9 for example). The designation of the control module or circuit by reference numeral 150 throughout the '707 patent would cause a person skilled in the art to consider the control module or circuit to be the same component both with respect to the discussion of Fig. 5 and the discussion of Figs. 9 and 9A.

In fact, the specification recites as a broad concept of the invention the measurement of one or more morphological characteristics, use of the characteristics to classify an occupant and use of the classification for adjustment of one or more vehicular components (col. 3, lines 1-14). One morphological characteristic is weight which may be determined "by a variety of technologies which measure either pressure on or displacement of the vehicle seat or the force in the seat supporting structure" (col. 3, lines 18-21). As mention in the '707 patent at col. 9, lines 60-63, the pressure in the container 515 gives an accurate measurement of the weight of the occupant. Hence, the measured pressure in the container or bladder is representative of or corresponds to the weight of the occupant and can be used as input to the control module 150 to control a vehicular component (and specifically one whose operation would be affected by the weight of the occupant such as an occupant restraint device). Accordingly, a person skilled in the art would readily understand that the invention includes use of any and all such technologies which expressly or inherently measure weight, including the pressure sensor associated with the container or bladder discussed with respect to the embodiment shown in Fig. 5, for controlling the adjustment of vehicular components, including the airbag as discussed with reference to Figs. 9 and 9A.

This understanding is further reinforced by the recitation at col. 12, lines 56-64 after all of the various embodiments of the invention are described, that "there are other possible combinations using

different morphological characteristics...of an occupant to accomplish the same or similar goals as described herein". This unequivocally implies that combinations of the different embodiments of the invention disclosed in the specification are considered part of the invention. One such combination is the use of the pressure sensor shown in Fig. 5 to provide input to a control module for controlling airbag deployment based thereon.

Additional reinforcement of the use of any disclosed morphological characteristic measuring system for controlling adjustment of a vehicular component is provided by Fig. 10A of the '707 patent which clearly shows a connection between a generic measurement means, processor, control means and an apparatus. A person skilled in the art would readily understand from Fig. 10A that the measurement means may be any of the measurement devices disclosed in the specification which measures a morphological characteristic of the occupant (including the pressure sensor of Fig. 5 which measures weight of the occupant), the processor can be a device which processes the measured morphological characteristics to obtain a control signal to provide for an adjusted position or use of an apparatus (for example, control module 150 which provides airbag adjustment parameters such as described with respect to Figs. 9 and 9A based on information about the occupant), and the control means is a device which adjusts the apparatus based on the control signal from the processor (e.g., an airbag valve 920, 930 as shown in Fig. 9A). This generic flow chart establishes the inventors' recognition of the possibility of using any of the disclosed morphological characteristic measuring systems for controlling an apparatus, including, inter alia, the use of weight as measured by any of the disclosed weight measuring systems for controlling deployment of an airbag.

In sum, it is respectfully submitted that the '707 patent fully supports the use of a common control module to both receive input from a pressure sensor in a seat and to control airbag deployment, as set forth in claims 60, 62 and 65. The same common control module can also perform numerous other functions as described in the '707 patent, e.g., control height sensors to determine the height of the occupant, adjust the seat based on the height of the occupant, adjust the seat based on the weight of the



occupant, etc. Moreover, it is respectfully submitted that the '707 patent supports claims which combine weight measurement and airbag deployment control.

In view of the foregoing, it is respectfully submitted that all of the subject matter of the rejected claims is sufficiently disclosed in the '707 patent to be entitled to the benefit of the filing date thereof which precedes that of Fortune et al. As such, Fortune et al. should not be available as prior art.

## 2. Second Group

Claims 67 and 68 relate to a method wherein multiple vehicular systems, subsystems or components are controlled by means of a common control module. One of the vehicular systems, subsystems or components is an occupant restraint device, e.g., an airbag, and the other may be a pressure control device which controls pressure in the chamber.

The '707 patent supports an omnibus "system" for adjusting various vehicular systems, subsystems and components based on morphology of an occupant (see col. 2, lines 15-48 and the discussion above).

In the '707 patent, there is explicit mention of an air compressor 555 which control pressure in the bladder 515 under control of the control circuit 150 (see col. 9, lines 55-57). There is also support for the same control circuit 150 controlling the valve 930 of the airbag 900 (col. 12, lines 23-30). Moreover, the '707 patent mentions the use of the same control module 150 for controlling other vehicular systems, including servo-motors 160, 170 for moving the headrest 111 (col. 5, lines 33-59), motors 191, 192, 193 for moving the seat (col. 6, lines 36-38) and motors 650, 660 for moving the steering column and pedals (col. 10, lines 52-55).

Additionally, it is pointed out that Fig. 5 shows control circuit 150 controlling an air compressor 555 to control the pressure in bladder 515, and also shows the same control circuit 150 connected to structure which is identical to that shown in Fig. 1 which relates to a system wherein control circuit 150 controls a headrest 111. That is, Fig. 5 shows the same structure as shown in Fig. 1 which is effective to

control the headrest 111, e.g., sensors (designated 120, 121), servo-motors (designated 160, 170) and wires (designated 131, 132) leading from the control circuit 150 to the servo-motors.

There is thus ample support in the '707 patent for the proposition that the same control circuit (designated 150) is being used for multiple purposes and to this end, receives input from various sensors and outputs control signals to control multiple vehicular systems, subsystems or components as set forth in claims 67 and 68.

The fact that Fig. 5 shows input specifically from particular sensors, namely from pressure transducer 560 and ultrasonic sensors 120, 121, to a common control circuit 150 does not limit the inventors' concept to that specific combination of inputs, but rather the inventors' concept of their invention is a system which is capable of using a common control circuit to receive input from any of the morphological measuring, detection or determining systems described in the specification. Moreover, the fact that Fig. 5 shows control of two specific vehicular systems, namely an air compressor 555 and servo-motors 160, 170 which direct movement of a headrest 111, via a common control circuit does not limit the inventors' concept to that specific combination of control output. On the contrary, the inventors' concept is a system having a common control circuit which controls any combination of vehicular systems described in the specification based on occupant morphology.

Indeed, the inventors unequivocally expressed their intent for the application which matured into the '707 patent to encompass "other possible combinations using different sensors which measure either the same or different morphological characteristics...of an occupant to accomplish the same or similar goals as those described herein" (col. 12, lines 57-61).

In view of the foregoing, it is respectfully submitted that the subject matter of claims 67 and 68 is sufficiently disclosed in the '707 patent to be entitled to the benefit of the filing date thereof which precedes that of Fortune et al. As such, Fortune et al. should not be available as prior art.

## CLAIMS APPENDIX

60. An apparatus for sensing pressure applied to a seat by an occupant of the seat and for controlling deployment of an airbag, comprising:

a bladder defining a chamber, said bladder being adapted to be arranged in a seat portion of the seat;

a control module arranged to control deployment of the airbag; and

a pressure sensor for measuring a pressure in said chamber, said pressure sensor generating a signal based on the measured pressure in said chamber and providing said signal to said control module.

62. A method for controlling an occupant restraint device arranged to protect an occupant in a vehicle in a crash involving the vehicle, comprising the steps of:

arranging a bladder defining a chamber in a seat portion of a seat in the vehicle;

measuring a pressure in the chamber;

providing a signal based on the measured pressure in the chamber to a control module; and

controlling deployment of the occupant restraint device by means of the control module.

64. The method of claim 62, wherein the occupant restraint device is an airbag.

65. A vehicle including a system for protecting an occupant in the vehicle in a crash involving the vehicle, comprising:

an occupant restraint device arranged in the vehicle to protect the occupant of the vehicle;

a seat having a seat portion;

a bladder having a chamber, said bladder being arranged in said seat portion;

a control module arranged to control deployment of said occupant restraint device; and

a pressure sensor for measuring a pressure in said chamber, said pressure sensor generating a signal based on the measured pressure in said chamber and providing said signal to said control module.

66. The vehicle of claim 65, wherein said occupant restraint device is an airbag.

67. The method of claim 62, further comprising the step of controlling at least one other vehicular system, subsystem or component by means of the control module.

68. The method of claim 67, wherein the at least one other system, subsystem or component is a pressure control device which controls pressure in the chamber.

## EVIDENCE APPENDIX

Not applicable.

## RELATED PROCEEDINGS APPENDIX

Not applicable.

## I. CONCLUSION

The grandparent '783 application provides support for the claimed invention in accordance with 35 U.S.C. §112 and therefore, the pending claims should be entitled to the benefit of the filing date thereof pursuant to 35 U.S.C. §120. Since Fortune et al. was filed after the '783 application, it is not available as prior art under any section of 35 U.S.C. §102.

Therefore, upon reason and authority, it is respectfully requested that the Board reverse the final rejection.

The fee of \$250.00 for filing an Appeal Brief, appellants having qualified for small entity status, should be charged to Deposit Account No. 50-0266. Any deficiency should be charged to the same Deposit Account.

An early and favorable action on the appeal is earnestly solicited.

FOR THE APPELLANTS

Respectfully submitted,



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